

### **REMARKS/ARGUMENTS**

After the foregoing Amendments, claims 1-5, 7-14, 16-23 and 25-31 are currently pending in this application. Claims 6, 15 and 24 have been canceled without prejudice or disclaimer. Claims 1-4, 7-13, 16-22 and 25-31 have been amended to more distinctly claim subject matter which the Applicants regard as the invention. The Applicants submit that no new matter has been introduced into the application by the Amendments.

#### **The Present Invention**

The present invention is related to a method and apparatus, (e.g., a communication system, a wireless transmit/receive unit (WTRU), an integrated circuit (IC), or the like), which is used to continuously counteract the effects of phase offsets introduced into a communication signal by an automatic gain control (AGC) circuit.

Referring to Figure 1 of the instant application, the apparatus 100 includes an AGC circuit 105 which receives and adjusts the gain of a communication signal 150. The AGC circuit 105 is controlled by a gain control signal 145. The apparatus 100 further includes an insertion phase variation compensation module 120 which continuously counteracts the effects of phase offsets introduced into the communication signal by the AGC circuit 105, based on the gain control signal 145. The apparatus 100 further includes a look up table (LUT) 155 which is electrically coupled to the insertion phase variation compensation module 120. Additionally, the apparatus 100 includes a modem 125 electrically coupled to the AGC circuit 105 and the LUT 155, wherein the modem 125 receives complex in-phase (I) and quadrature (Q) signal components from the insertion phase variation compensation module 120. The modem 125 outputs the gain control signal 145 based on the

complex I and Q signal components. The modem 125 outputs the gain control signal 145 to the AGC circuit 105 and the LUT 155. The LUT 155 provides estimates of the phase offsets to the insertion phase variation compensation module 120 as a function of the gain control signal 145 that the LUT 155 receives from the modem 125.

### **Claim Rejections**

Claims 1, 10 and 28 are rejected under 35 U.S.C 102(b) as being anticipated by U.S. Patent No. 5,898,912 (Heck et al., hereinafter referred to as Heck). Claims 2-7, 11-16, 19-25 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable by Heck in view of U.S. Patent No. 6,240,100 (Riordan et al., hereinafter referred to as Riordan). Claims 7, 16, 25 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable by Heck in view of Riordan and further in view of U.S. Patent No. 6,340,883 (Nara et al., hereinafter referred to as Nara). Claims 7-9, 16-18, 25-27 and 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable by Heck in view of Riordan and further in view of U.S. Patent No. 6,308,057 (Hayashi).

Heck discloses a direct current (DC) offset compensation method and apparatus. Heck is concerned with DC offset, which is not the same as phase offset associated with the in-phase (I) and quadrature (Q) signal components of the apparatus.

Riordan discloses a cellular TDMA base station receiver with dynamic DC offset correction. Riordan does not address the features of continuously counteracting the effects of phase offsets introduced into a communication signal, as recited in the claims.

Nara discloses a wide band IQ splitting apparatus and calibration method whereby the amplitude and phase of I and Q signals are balanced.

Hayashi discloses a radio receiver that compensates for DC offset.

Claims 1, 10, 19 and 28 have been amended to more distinctly claim subject matter which the Applicants regard as the invention. The Applicants submit that the prior art of record fails to teach or suggest the features of amended claims 1, 10, 19 and 28. Specifically, the prior art of record fails to teach or suggest a modem which is electrically coupled to: 1) an AGC circuit and 2) a look up table (LUT), wherein the modem receives complex in-phase (I) and quadrature (Q) signal components from an insertion phase variation compensation module, and outputs the gain control signal to the AGC circuit 105 and the LUT. Furthermore, the prior art of record fails to teach or suggest an LUT that provides estimates of the phase offsets to the insertion phase variation compensation module as a function of the gain control signal that the LUT receives from the modem.

The Applicants submit that the prior art of record fails to teach or suggest, alone or in combination, all of the features recited in amended claims 1, 10, 19 and 28. Furthermore, claims 2-5, 7-9, 11-14, 16-18, 20-23, 25-27 and 29-31 are dependent upon claims 1, 10, 19 and 28, respectively, and are also believed to be patentable over the prior art of record for the reasons presented above.

Based on the arguments presented above, the withdrawal of the rejections of the pending claims under 35 U.S.C 102(b) and 35 U.S.C. 103(a) is respectfully requested.

### **Conclusion**

If the Examiner believes that any additional minor formal matters need to be addressed in order to place this application in condition for allowance, or that a telephone interview will help to materially advance the prosecution of this

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application, the Examiner is invited to contact the undersigned by telephone at the Examiner's convenience.

In view of the foregoing Amendment and remarks, the Applicant respectfully submits that the present application, including claims 1-5, 7-14, 16-23 and 25-31, is in condition for allowance and a notice to that effect is respectfully requested.

Respectfully submitted,

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